

GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
Nuclear Recycle Group, Trombay
Technology Development Division
Remote Handling and Automation Section



भारत परमाणु अनुसंधान केंद्र
BHABHA ATOMIC RESEARCH CENTRE

Ref:BARC/NRG/TDD/AMC/MHE/ 65875

Date: 9/2/2023

NIT for Annual Maintenance Contract (AMC)
Due date: 22/2/2023 up-to 15:00 hrs.

Sealed quotations (it include vendor quotation along with quote of spare parts as per list of technical specification) are invited for and on behalf of the President of India for the work as described below. The last date of submission of sealed quotation is 22/2/2023 up to 15:00 hrs at Room No. 318, WIP Process Building, Trombay, Mumbai 400085, of Technology Development Division. Please mention the reference number on the front cover of the sealed quotation. Sealed quotation shall only be sent through Postal Speed Post/Normal Post only. Hand/courier delivery of the quotations is strictly not allowed. The sealed quotation will be opened on 23/2/2023 at 14:30 hrs. in the office of in the office of Assistant Accounts Officer, GSS, BARC, Trombay, Mumbai- 400085.

Description of work	Duration of contract
Annual Maintenance Contract (AMC) for 2MT EOT Crane (1 No.), 1 MT EOT crane (1 No.), 2MT Hoist (1 No.) for Period of 2Years at RSMS, BARC, Trombay, Mumbai	2 Years

Terms & Conditions

- 1. Vendor Evaluation Criteria:** The Vendor having experience in maintenance of EOT Crane/Hoist of minimum 2MT Capacity shall participate in tender. For the proof of experience the vendor has to submit the Work Order/Purchase Order with completion certificate.
- 2. Option:**
 - a) While the contract is intended to be valid for a period of **two years**, this Division reserves the right to terminate this contract by giving a notice of one month and without any financial obligation on the part of this Division. In the event of cancellation of the contract for a reason or the other the payment for service carried out will be paid on pro-rata basis.
 - b) Proportionate amount shall be deducted from service charges for non- servicing period.
- 3. Emergency Call:** Emergency/Breakdown call from the user department should be attended immediately but not later than 24 hours at no extra cost.
- 4. Scope of work: As per the attached technical specification**
 - a) Thorough cleaning, lubrication, testing, re-adjusting, replacement of parts needed for proper operation.
 - b) To repair defects during the currency of the contract.
 - c) Annual testing of the crane as per the BARC approved procedure and IS3177.
 - d) To keep the equipment in up to date condition during the currency of the contract.
- 5. Replacement of spare parts:** The cost of the spare part replaced during the currency of the contract will be paid extra at actuals. However, the parts may be replaced with approval of user department regarding the reasonableness of cost and necessity of replacement.
- 6. Service Charges:** Service Charges accepted shall be firm during the period of the contract.
- 7. Payment:**
 - I. Payment will be made half yearly (two quarters) on pro rata basis.
 - II. Invoice in triplicate shall be forwarded indicating the service contract number and date, for arranging payment.
 - III. 100% payment for spares will be released after due approval on receipt of bill duly certified by the user department indicating the spares have been actually replaced and rates are reasonable.
 - IV. **The contractor will not be eligible to claim any interest on account of delay in receiving any payment.**
 - V. **Penalty will be levied for Non-servicing under the clause of the contract.**
- 8. Bills:**
 - a) Bill and cash receipts for payment may be forwarded to the undersigned indicating our contract number for record.

b) Bill for spares replaced during the service contract period may please be forwarded to Head TDD, BARC duly certified by the user department that the spares have been actually replaced and cost is reasonable.

9. **Completion Report:** A completion report may please be forwarded to this Office with copy to the user department after completion of the last servicing but well before the expiry of the contract certifying that the equipment have been serviced as per the terms and conditions of the contract and also with your proposal for extension of the contract if any, indicating our contract No. and date for our consideration.

10. Please ensure that our service contract number is quoted in all correspondences and bills etc.

11. Kindly acknowledge receipt and confirm that the servicing repair will be carried out in terms of the contract.

12. Income Tax @ 2%, Surcharge on IT and Education Cess on IT&SC as applicable will be deducted from the bills.

13. Confidentiality Clause:

I. Confidentiality: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractors, adviser or the employees engaged by a party with equal force.

II. "Restricted information" categories under Section-19 of the Atomic Energy Act, 1962 and "Official Secrets" under Section-5 of the Official Secrets Act, 1923: Any contravention of the above-mentioned provision by any contractor, subcontractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.

III. Prohibition against use of BARC's name without permission for publicity purposes: The contractor, sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like Press, Radio, TV or Internet without the prior written approval of BARC

14. **Working Condition:** a) Police verification certificate is required for all workers and Supervisor deployed at the site.

b) **Department shall not be responsible for any injury caused to contractor workforce due to any reason/unsafe workmanship while working at site.**

15. Quotation (it include vendor quotation along with quote of spare parts) shall clearly mention basic cost, rate of GST + any other taxes/levies applicable separately. Necessary exemption certificate will be made available to successful vendor.

The offer shall be kept valid for a period of 60 days from the date of opening of the tender. All taxes, levies and transportation charges if any, shall be clearly brought in your offer. Full payment shall be made only after successful completion and acceptance of the work. The offers should be sent in sealed envelope to:

ShashiRanjan Kumar
Scientific Officer-E
Room No. 318, WIP-Process building
Technology Development Division,
Nuclear Recycle Group, BARC-Trombay, Mumbai-400085

The following information should be written on the sealed offer:

1. Our Enquiry no.
2. Subject
3. Due Date
4. Sender's full address.

Encl: Technical specification.

Head TDD

For and on behalf of The President of India

वाय.सी. शिवकुमार / Y. C. Shivakumar
अध्यक्ष, प्रौद्योगिकी विकास प्रभाग
Head, Technology Development Division
नासुव / NRG, भापअके / B.A.R.C.
भारत सरकार / Government of India

Technical Specification

Ref: BARC/NRG/TDD/AMC/MHE/ 65875

Date: ___/1/2023

Annual Maintenance Contract (AMC) for 2MT EOT Crane (1 No.), 1 MT EOT crane (1 No.), 2MT Hoist (1 No.) for Period of 2 Years at RSMS, BARC, Trombay, Mumbai

I. Scope of work.

1. Periodical maintenance of the Material Handling Equipment (MHE) as mentioned above will be done quarterly (every 3 months). Total number of maintenance (services) in a year will be 4 (Four) and there will be 8 (Eight) services in two years.

The services will commence 1 months after the placement of AMC work-order. First and third visit will be regular maintenance of the equipment, second and fourth visits will be for major over-hauling of the equipment and the functional test, load test will be done on yearly basis as per MHE guideline.

2. First and third visit will be of two days; second and fourth visit will be of five days.
3. In addition to above visit, there shall be two more visits in a year for brake-down maintenance if required. Vendor has to attend the brake-down maintenance within 24 hours.
4. Scope of works for each visit are defined in Annexure-I.

II. Spare Parts: List of essential spare parts will be provided by BARC in Annexure-II. Vendor has to quote the unit price rate of spare parts which will be firm (fixed) for the currency of the contract. These spare parts will be utilized as and when required after the due approval from the competent authority. Vendor has to provide the same in minimum time. The cost of spare parts replaced during the currency of the contract will be paid extra at actuals. Payments for the spare parts will be made only after satisfactory working of the spare parts.

This cost will be the currency of contract used for the payment entire service period.

All the consumable required for servicing such as Oil, Greece and brake liner etc. are in scope of the vendor i.e no extra cost will be paid by BARC.

III. Man-power: For each visit vendor has to provide one supervisor, two technicians, and two helpers for each days.

IV. General Description of Work to be carried out:

1. Adjustment/alignment of brakes - on all motions hoisting, cross travel and long travel - To be carried out once in a quarter.
2. Adjustment/realignment of gear system for all motion main hoist, cross travel and long travel slow speed. Greasing of gears on all motions - To be carried out once in quarter.
3. Thorough overhauling of all motions of crane i.e. HT, CT and LT. This will involve opening the brakes, lubricating the motor bearings, - To be done in two quarter.
4. Tightening/lubricating all geared couplings/bolts on all motions i.e. main hoist, aux hoist, CT and LT - To be done once in a quarter.
5. Topping of gear oil in gear boxes of all motions namely main hoist, aux hoist, CT and LT - To be done once in a quarter.
6. Lubrication of all greasing points on crab trolley drum bearings, motor bearings, sheave bearings, Thruster pins, linkages, CT wheels on end carriages, LT wheel bearings, Thruster pins/linkages, geared couplings, motors etc. - To be carried out every quarter.

7. **On bottom blocks:** Lubrication of pulleys, thrust bearings etc. wire rope; lubrication of wire ropes with cadmium compound to be done once in a quarter.
8. **Control Panel:** Tightening of connections at terminal strips - To be done every quarter. Realignment/resetting of overload relay - To be done once in a quarter. Cleaning of contact kits on all contacts - To be done once in a quarter.
9. **Push button control:** Tightening of connections - To be done every quarter.
10. **Limit switches on all motions, HT, CT and LT:** Tightening of mounting bolts, alignment of operating cams. Tightening of cable terminals - To be done once in a quarter.
11. **Electric motors on all motions Hoist, CT and LT** General Cleaning of all the motor components tightening of terminal box connections - To be done once in a quarter.
12. **Rail & Clamps: CT & LT** Inspection and tightening of rail and clamps.
13. **Annual testing:** Carrying out annual testing of the crane as per the MHE requirements. One testing in the year. Total two testing's in two years. Load will be arranged by department.
14. **Emergency Call:** Emergency/Breakdown call from the user department should be attended immediately but not later than 24 hours at no extra cost.
15. The firm shall ensure minimum downtime of EOT cranes/hoists through proper servicing & preventive maintenance.

V. **Load test once in a Year:** All the EOT & Hoist shall be Load tested once in a year (as per due date specified by MHE) as per IS3177 & BARC Regulatory guideline.

The Load test shall be as per follow:

- a) **No load test:** trials shall be conducted. Motor currents, functional checks of drives for each motion, functionality of all limit switches and interlocks shall be verified.
- b) **Rated load test:** Checks for functioning of motions, travel limits, interlock operations, brake operations, functioning of drive mechanisms at rated load shall be conducted in addition to checks for specified speeds at rated load. The maximum deflection with rated load shall be checked for the span.
- c) **25% over load test:** Slippage of brake if any shall be checked.

VI. **Documentation:** Vendor has to compile all the documents such as Inspection Report, Load Test Report etc. and submit to BARC.

VII. **Safety and security norms to work inside the BARC:**

The firm shall observe all safe working practices and shall provide safety gears to his worker wherever necessary. **The contractor has to strictly abide the safety norms laid down by the BARC.** He will strictly abide by the rules and regulations set by Security Section of BARC. As the above work is to be executed inside BARC, the valid Police Verification Certificate (PVC) for all working personnel including site engineer is mandatory and the contractor shall arrange for the PVC for all his staff after placement of Work Order.

- a. Good safety and housekeeping practices are to be observed during the work in this area. The area is to be cleaned after each days of work. Waste material, if any, has to be stored at designated places and is to be disposed as per the rules after completion of the work.
- b. The vendor shall arrange adequate accident insurance coverage of his personnel. BARC shall not be responsible for any liability arising out of any accident / injury caused to vendor's personal while executing the work.
- c. To the extent possible the work shall be carried during the normal working hours i.e 9.30 A.M to 5.30 P.M. Monday to Friday. Prior permission will be required to work on holidays and beyond office hours on working & holidays.
- d. This work involves working in restricted area with security restrictions on entry of workers, working time etc.

- e. Contractor shall at his own cost, make arrangements for transport of his personnel, materials, tools etc. to and from the site.

VIII. Terms & Condition: Vendor is requested to quote on lump-sum basis for contract period of 02 (two) years including GST. Payment will be made equally for each visit (i.e lump-sum divided by 8).

Shashi Ranjan Kumar
(S.R.Kumar)
SO/E, TDD, NRG 31/11/2023

Annexure-I
Scope of works for each visit

Ref. BARC/NRG/TDD/AMC/MHE/65875

Date: 9/2/2023

1. Description of 1st (First) Visit:

Sr. No.	Components	Action To be Taken	Work Remarks	Works Done	Signature & date	
					Vendor	BARC
1.	Complete items	Thorough visual checks of all the MHE items				
2.	All crane parts	Cleaning of complete crane such as Control Panel, Resistance Box, All Electrical terminals at panel, All Motors, Brakes, Limit Switches etc., LT Mechanism, Hoisting Mechanism, CT Mechanism, Hook Block assembly, Top Block assembly, LT rail track, All brakes.				
3.	Repair/trouble shooting of components (Electrical & Mechanical components)	Repair/replacement of the components if required				
4.	Oiling & Greasing	Oiling of Gear Box to be checked and assessed for replacement Greasing of coupling, CT and LT wheels, Hook Block, Lubrication of wire rope, All the greasing points				
5.	Checking of all electrical components & terminals	Functional Check of all electrical components and tightening of electrical terminals (if loose), Push Button				
6.	Checking of all Mechanical components	Functional Check of all Mechanical components such as Brake, Coupling, Wheel Movement, Gear Box, Hook block, Wire rope, Bearing (if any abnormal noise or abnormal function)				

2. Description of 2nd (Second) Visit:

Sr. No.	Components	Action To be Taken	Work Remarks	Works Done	Signature & date	
					Vendor	BARC
1.	Complete items	Thorough visual checks of all the MHE items.				
2.	All crane parts	Cleaning of complete crane such as Control Panel, Resistance Box, All Electrical terminals at panel, All Motors, Brakes, Limit Switches etc., LT Mechanism, Hoisting Mechanism, CT Mechanism, Hook Block assembly, Top Block assembly, LT rail track, All brakes, Nut & Bolts loosen.				
3.	Repair/trouble shooting of components (Electrical & Mechanical components)	Repair/replacement of the components if required				
4.	Oiling & Greasing	Oiling of Gear Box to be checked and assessed for replacement Greasing of coupling, CT and LT wheels, Hook Block, Lubrication of wire rope, All the greasing points				
5.	Checking of all electrical components & terminals	Functional Check of all electrical components and tightening of electrical terminals (if loose), Push Button				
6.	Checking of all Mechanical components	Functional Check of all Mechanical components such as Brake, Coupling, Wheel Movement, Gear Box, Hook block, Wire rope, Bearing (if any abnormal noise or abnormal function)				

3. Description of 3rd (Third) Visit:

Sr. No.	Components	Action To be Taken	Work Remarks	Works Done	Signature & date	
					Vendor	BARC
1.	Complete items	Thorough visual checks of all the MHE items				
2.	All crane parts	Cleaning of complete crane such as Control Panel, Resistance Box, All Electrical terminals at panel, All Motors, Brakes, Limit Switches etc., LT Mechanism, Hoisting Mechanism, CT Mechanism, Hook Block assembly, Top Block assembly, LT rail track, All brakes.				
3.	Repair/trouble shooting of components (Electrical & Mechanical components)	Repair/replacement of the components if required				
4.	Oiling & Greasing	Oiling of Gear Box to be checked and assessed for replacement Greasing of coupling, CT and LT wheels, Hook Block, Lubrication of wire rope, All the greasing points				
5.	Checking of all electrical components & terminals	Functional Check of all electrical components and tightening of electrical terminals (if loose), Push Button				
6.	Checking of all Mechanical components	Functional Check of all Mechanical components such as Brake, Coupling, Wheel Movement, Gear Box, Hook block, Wire rope, Bearing (if any abnormal noise or abnormal function)				

4. Description of 4th (Fourth) Visit:

Sr. No.	Components	Action To be Taken	Work Remarks	Works Done	Signature & date	
					Vendor	BARC
1.	Complete items	Thorough visual checks of all the MHE items				
2.	All crane parts	Cleaning of complete crane such as Control Panel, Resistance Box, All Electrical terminals at panel, All Motors, Brakes, Limit Switches etc., LT Mechanism, Hoisting Mechanism, CT Mechanism, Hook Block assembly, Top Block assembly, LT rail track, All brakes.				
3.	Repair/trouble shooting of components (Electrical & Mechanical components)	Repair/replacement of the components if required				
4.	Oiling & Greasing	Oiling of Gear Box to be checked and assessed for replacement Greasing of coupling, CT and LT wheels, Hook Block, Lubrication of wire rope, All the greasing points				
5.	Checking of all electrical components & terminals	Functional Check of all electrical components and tightening of electrical terminals (if loose), Push Button				
6.	Checking of all Mechanical components	Functional Check of all Mechanical components such as Brake, Coupling, Wheel Movement, Gear Box, Hook block, Wire rope, Bearing (if any abnormal noise or abnormal function)				
7.	Load test of all MHE items	Load test of all MHE items as per IS3177 and as per the guideline of BARC safety committee (MHEC, BSC, Trombay, Mumbai) [Depending on the due date specified by MHE]				

Note: 1. Oil of Gear Box to be replaced once in a year.

Annexure-II

List of spare parts (Cost of spares shall not be included in ex-work cost at the AMC price-bid)
Ref. BARC/NRG/TDD/AMC/MHE/65875 **Date: 9/2/2023**

The vendor has to quote the unit rate of the spare parts as listed below, and the price quoted by the vendor will be firm (fixed) during the currency of contract, and vendor will provide the same after due approval by competent authority. These spare parts will be required during the service of the MHE items. The payment of spare will be made after installation and satisfactory performance of the same.

Spare list for 2MT EOT Crane:

Sr. No.	Component	Technical Details	Unit	Unit Rate (Rs./Unit)
1.	Brake	LT & CT	SEW Make, Torque: 3.2N.m, Model No. BR02	
		HT	DCEM Disc Type, PETHE Make, DC Failsafe spring loaded Disc brake working on 190 V DC, Model : PEM – 130, Torque 2 Kg-m	
			DCEM Shoe Type, BCH Electrical Make, Size-100mm, Torque: 13.558N.m, Capacity: 9-42W	
2.	Motor	LT & CT	SEW Make, 0.18/0.5kW/HP, IP-54, 1320 RPM	
		HT	Bharat Bijlee Ltd (BBL) Make, 3 Phase Square cage induction motor, Operating Temp- 50 ⁰ C, 1.5/2 kW/HP, 1385 RPM, Model No. N1887063	
3.	Limit Switches	LT	SOC Make, Type- LS/2SH/2, 415V, 40A, Sr. No. LH-948	
		CT	Power line Industry Make, Sr. No. L-623, 415V	
4.	Gravity Limit Switch	SOC Make, 10A capacity, Type-CH/S, SR. No. GH 568		
5.	Push Button	Telemecanique Make, Model No.- XAC-A881, IP 65, 300V Max, Type-4		
6.	Relay Switch	Schneider Make, Range-0.53-1A		
7.	DSL Current Collector Bush	100A Capacity		
8.	Contactora	Schneider Make, 3 Nos. Contactor type.- LC1D09/LC1D12		
9.	VFD	HT	Schneider Make/ Altivar machine, ATV 320U22N4C/14L1737/999062, 2.2kW/3HP, 382-400V	
		CT	Schneider Make/ Altivar machine, ATV 312H027N4, 8B-1814317195, 0.37kW/0.5HP, 382-500V	
		LT	Schneider Make/ Altivar machine, ATV 320U07N4C/HL1818/476124, 0.75kW/1HP, 382-400V	

Signature & Seal of Vendor

List of Spare parts for 1MT EOT Crane:

Ref. BARC/NRG/TDD/AMC/MHE/65875

Date: 9/2/2023

Sr. No.	Component	Technical Details	Unit	Unit Rate (Rs./Unit)
1.	Brake	LT & CT	A.G. Engineer Make, Mode-DAT 130, Braking Torque- 0.3 Kg.m	
		HT	ACEM Shoe Type, A.G. Engineer Make, Mode-DAT 190, Braking Torque- 3 Kg.m	
2.	Motor	LT & CT	Bharat Bijlee Ltd (BBL) Make, 3 Phase Square cage induction motor, Operating Temp- 45 ⁰ C, SEW Make, 0.5/0.75kW/HP, IP-55, 910 RPM, 1.45A	
		HT	Bharat Bijlee Ltd (BBL) Make, 3 Phase Square cage induction motor, Operating Temp- 45 ⁰ C, .75/1 kW/HP, 680 RPM, 2.8A	
3.	Limit Switches	LT	Boman Make, 10A capacity	
		CT	Boman Make, 10A capacity	
4.	Gravity Limit Switch	Lever Type, S-O-C Make		
5.	Relay Switch	Siemens Make, Range-2-6A		
6.	Festoon Cable	FRLS PVC Insulation of 1.5 Sq.mm copper		
7.	Contactors	Siemens Make, Range-10-16A		

Signature & Seal of Vendor

List of Spare parts for 2MT Hoist:

Ref. BARC/NRG/TDD/AMC/MHE/65875

Date: 9/2/2023

Sr. No.	Component	Technical Details	Unit	Unit Rate (Rs./Unit)
1.	Brake (HT)	DCEM Disc Type, PETHE Make, DC Failsafe spring loaded Disc brake working on 190 V DC, Model : DCCH-17, Torque 3 Kg-m, Sr No.- 12309		
2.	Motor (HT)	3 Phase Square cage induction motor, Operating Temp-45°C, 1.5/2 kW/HP, 750 RPM, 5.3A, S4-40% cdf, IP-55		
3.	Limit Switch (HT) Rotary	Boman Make, 10A capacity		
4.	Gravity Limit Switch	Lever Type, S-O-C Make		
5.	Relay Switch	Siemens Make, Range-2-6A		
6.	Contactator	Siemens Make, Range-10-16A		
7.	VFD	Fuji Electricals, 16.8 A, 380-480V		

Signature & Seal of Vendor

Annexure-III
(Format for Quotation, Submitted on Vendor Letter Head)

Ref NIT: BARC/NRG/TDD/AMC/MHE/65875

Date: 9/2/2023

Name of Work: - Annual Maintenance Contract (AMC) for 2MT EOT Crane (1 No.), 1 MT EOT crane (1 No.), 2MT Hoist (1 No.) for Period of 2 Years at RSMS, BARC, Trombay, Mumbai

Sr No.	Description	Qty.	Rate/Unit (Rs.)
1.	AMC and annual testing of 2MT EOT crane-1No., 1MT EOT Crane-1 No. and 2MT Hoist-1 No installed at RSW Refurbishment Facility RSMS, BARC, Trombay for period of 02 (two) years. (Cost of spares in Annexure-II not to be included)	Lump-sum	
2.	GST @ 18%		
3.	Grand Total (Rs.)		

Signature & Seal of vendor

**Annexure-IV
(Check List)**

Ref NIT: BARC/NRG/TDD/AMC/MHE/65875

Date: 9/2/2023

Sr. No.	Activity	Action	Remarks
	Long Travel (LT) Wheel Drive - Right:		
1.	Check all the fasteners of gear box, motor etc.	OK/ Tightened.	
2.	Check the Greasing in the reduction gear box and make up.	OK/ Make up/ NA/Grease Replace	
3.	Lubricate the wheel gear pinion.	OK/ Lubricated/ NA	
4.	Lubricate the wheel bearing.	OK/ Lubricated/ NA	
5.	Check the brake clean/ replace.	OK/ Cleaned/ Replaced/NA	
6.	Check and adjust the setting of the brake assembly.	OK/ Adjusted/ NA	
7.	Check/ Replace the coupling bolts and bushes/ spiders etc.	OK/ Replaced/ NA	
8.	Lubricate the rear wheel bearing.	OK/ Lubricated/ NA	
9.	Check and lubricate motor bearing.	OK/ Lubricated/ NA	
10.	Check any other item which is not specified above.	OK/ Done/NA	
	Long Travel (LT) Wheel Drive - Left:		
11.	Check all the fasteners of gear box, motor etc.	OK/ Tightened.	
12.	Check the Greasing in the reduction gear box and make up.	OK/ Make up/ NA/Grease Replace	
13.	Lubricate the wheel gear pinion.	OK/ Lubricated/ NA	
14.	Lubricate the wheel bearing.	OK/ Lubricated/ NA	
15.	Check the brake clean/ replace.	OK/ Cleaned/ Replaced/NA	
16.	Check and adjust the setting of the brake assembly.	OK/ Adjusted/ NA	
17.	Check/ Replace the coupling bolts and bushes/ spiders etc.	OK/ Replaced/ NA	
18.	Lubricate the rear wheel bearing.	OK/ Lubricated/ NA	
19.	Check and lubricate motor bearing.	OK/ Lubricated/ NA	
20.	Check any other item which is not specified above.	OK/ Done/NA	
	Cross Travel (CT):		
21.	Check all the fasteners of gear box, motor etc.	OK/ Tightened	
22.	Check/ Replace the Grease of reduction gear box.	OK/ Made-up/ Replaced	
23.	Lubricate the CT wheel bearing front right.	OK/ Lubricated/ NA	
24.	Lubricate the CT wheel bearing front left.	OK/ Lubricated/ NA	
25.	Lubricate the CT wheel bearing rear right.	OK/ Lubricated/ NA	
26.	Lubricate the CT wheel bearing rear left.	OK/ Lubricated/ NA	
27.	Check/ Replace the coupling, rubber bushing etc.	OK/ Replaced/ NA	

28.	Check the brake clean/ replace.	OK/ Cleaned/ Replaced/ NA	
29.	Check and adjust the setting of the brake assembly.	OK/ Adjusted/ NA	
30.	Check/ Adjust the clearance between wheel and rail.	OK/ Adjusted/ NA	
31.	Check any other item which is not specified above.	OK/Done/NA	
	Hoist Drum:		
32.	Check/ Replace the oil of hoist gear box.	OK/ Made-up/ Replaced	
33.	Lubricate the hoist drum shaft bearing.	OK/ Done	
34.	Lubricate the hoist drum shaft bearing.	OK/ Done	
35.	Lubricate the bottom sheave bearing right.	OK/ Done	
36.	Lubricate the bottom sheave bearing left.	OK/ Done	
37.	Check/ Lubricate the side wheel bearing.	OK/ Lubricated/ NA	
38.	Check the wire rope.	OK/Done/NA	
39.	Check the hoist rope for broken strands.	OK/ Damaged	
40.	Check the tightness of rope clamp bolts.	OK/ Tightened	
41.	Lubricate the wire rope.	OK/ Done	
42.	Check the load test for wire rope.	OK/Done/NA	
43.	Check the setting and adjust the Brakes.	OK/ Done/ NA	
44.	Check/ Tighten all fastener of hoisting system.	OK/ Tightened	
45.	Check/ Replace the coupling bolts/ bushes.	OK/ Replaced	
46.	Check/ Lubricate hook thrust bearing.	OK/ Lubricated/ NA	
47.	Check the brake liners clean/ replace.	OK/ Clean/ Replaced/ NA	
48.	Check and adjust the setting of the brake.	OK/ Adjusted/ NA	
49.	Check any other item which is not specified above.	OK/Done/NA	
	Electrical:		
50.	Check all the power/ control cables are in good condition.	OK/ Damaged	
51.	Check/ Tighten all the terminals of power & Control wire in control panel, resistance box etc.	OK/ Tightened	
52.	Check/ Tighten all the terminal of L.T motor.	OK/ Tightened	
53.	Check/ Tighten all the terminal of C.T motor.	OK/ Tightened	
54.	Check/ Tighten all the terminal of hoist motor.	OK/ Tightened	
55.	Check/ Tighten terminals of L.T limit switches	OK/ Tightened	
56.	Check/ Tighten terminals of C.T limit switches.	OK/ Tightened	
57.	Check/ Tighten terminals of hoist limit switches	OK/ Tightened	
58.	Check/ Tighten the earthing fastener - 1st earthing.	OK/ Tightened	
59.	Check/ Tighten the earthing fastener - 2nd earthing.	OK/ Tightened	

60.	Check the hoist motor for healthy earthing.	OK	
61.	Check/ Adjust all the overload range as per motor.	OK/ Adjusted	
62.	Check all the indication lamps are functioning properly.	OK	
63.	Check power on indication lamps are functioning properly	OK	
64.	Check the emergency off switches are working properly.	OK	
65.	Check any other item which is not specified above.	OK/ Done/NA	
	General (Structure):		
66.	Check structure for its Healthiness.	Check/ Tightened	
67.	Check/ Tighten the L.T travel rail fasteners	OK/ Tightened	
68.	Check/ Tighten the C.T travel rail fasteners	OK/ Tightened	
69.	Check the alignment and rigidity of the rails.	OK/ Rigid	
70.	Check the healthiness of end Stoppers	OK/ Good Condition	
71.	Check/ Tighten all end carriage fasteners.	OK/ Tightened	
72.	Check/ Adjust the rail wheel clearance.	OK/ Adjusted	
73.	Check the supporting structure for any cracks	OK/ Damaged	
74.	Check functioning of limit switches	OK/ Adjusted	
75.	Check the functioning of Gravity limit switch	OK/ Adjusted	

Signature & Seal of Vendor